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What Do RECs Convey?



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Issues

- National markets
- Ownership
- Public expectations
- Emissions markets

National vs Local Benefits

- How important are local benefits to REC buyers?
- How about to regulators and to marketers?
- Does a desire for local benefits mean that a national REC market is unlikely to develop?
- Is a national market important?
- If yes, what is needed to make a national market develop?

REC Ownership Confusion

- FERC says you can't rely on PURPA to determine ownership, tosses it back to states
- Net metering: most states are silent
 - NWE claims the RECs, MO implies utilities owns them, NJ is clear that customers own them
- Who owns the RECs from customer-owned installations that receive state subsidies?
 - Where do you draw the line?
- These are all policy decisions, but what do we think ought to happen?

Consumer Expectations

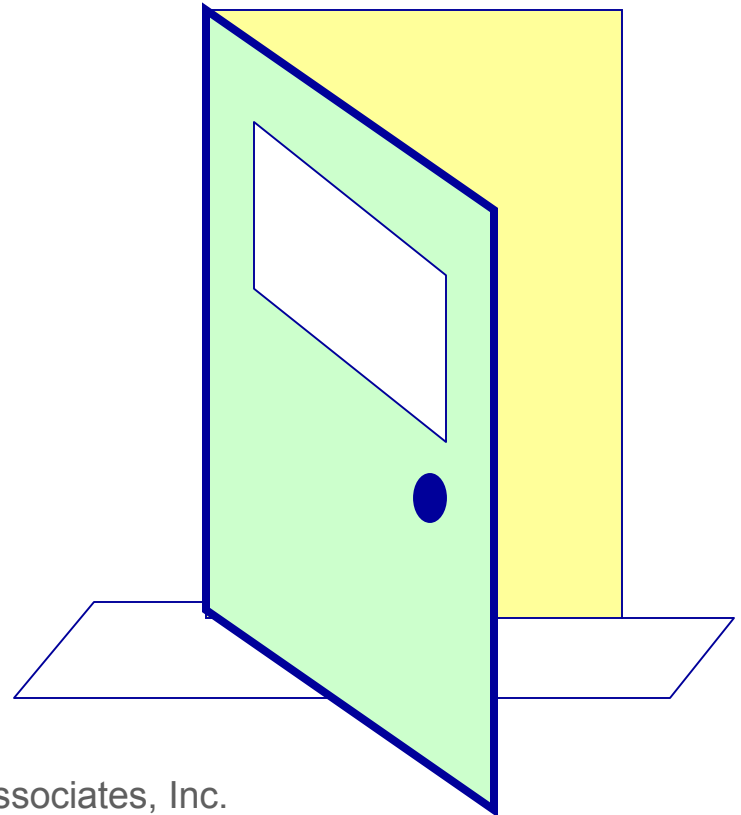
- Not just a REC question, also a green power question
- What does research tell us
 - FTC and AGs likely to want us to follow consumer interpretations
- Do they think they are getting emissions benefits
- One argument is that they're not really getting them, despite what they think
 - Can we realistically educate consumers to accept that they are supporting RE even if the environmental benefits are being used elsewhere?
- How important is the voluntary market in the overall scheme of things?

Emissions Markets

- Emissions-free renewables like wind should be able to capture the environmental value it brings to the generation system
 - to be excluded from emissions markets is unfair
 - and renewable generators could use the revenue
- Most of us have assumed that we should pry open the door to emissions markets
- Three approaches or models follow

Threshold Question

- Do renewables have access to emissions markets? Can renewables participate?
 - Is there some kind of allocation of allowances or recognition of offsets?
 - If not, the other issues such as quantification of benefits and disaggregation of attributes are moot

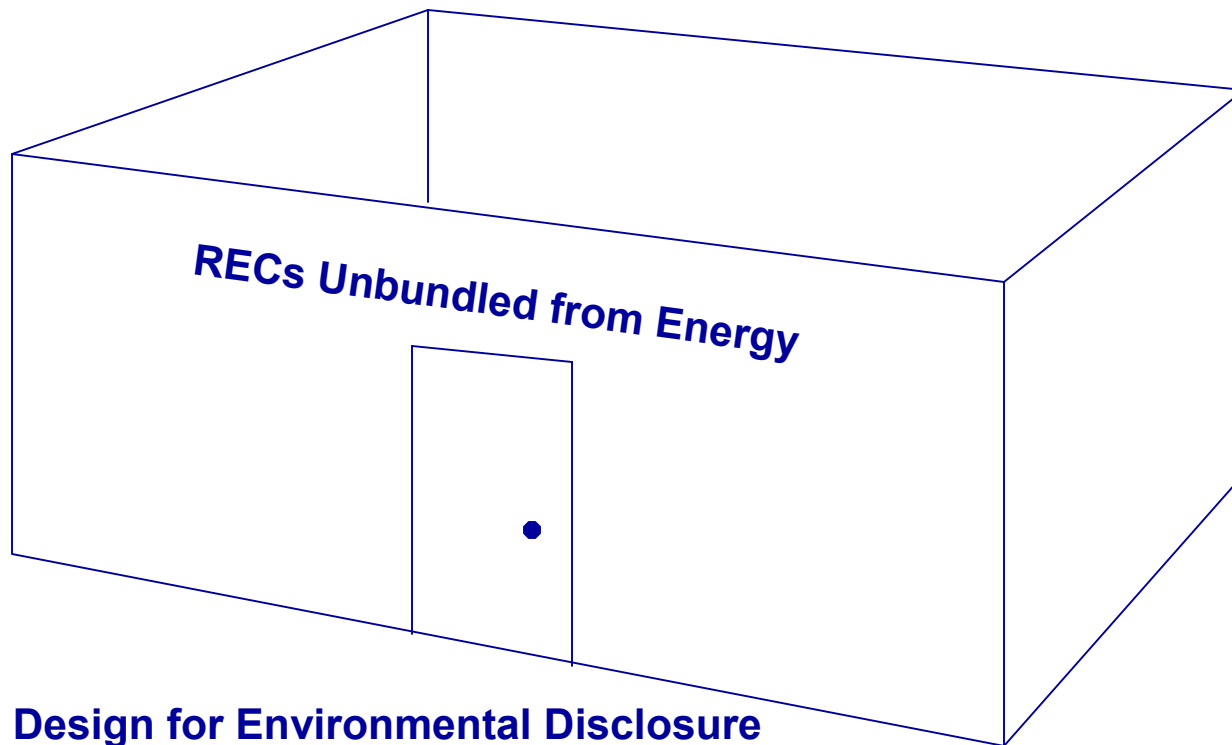


Back to Basics: Objectives

- Create more demand for wind/renewables
 - encourage adoption of policy mandates (RPS)
 - encourage voluntary demand for green power
- Maximize revenue
 - make renewables more cost-effective
- Encourage retail markets--both competitive and utility-supported
 - requires credible and trustworthy claims
- Maximize environmental benefits
 - create policies with incremental benefits (additionality)
- Create a more fungible commodity

Starter House of RECs

**A REC represents all the attributes of generation -
necessary for environmental disclosure, and
necessary for buyer to receive all the benefits**

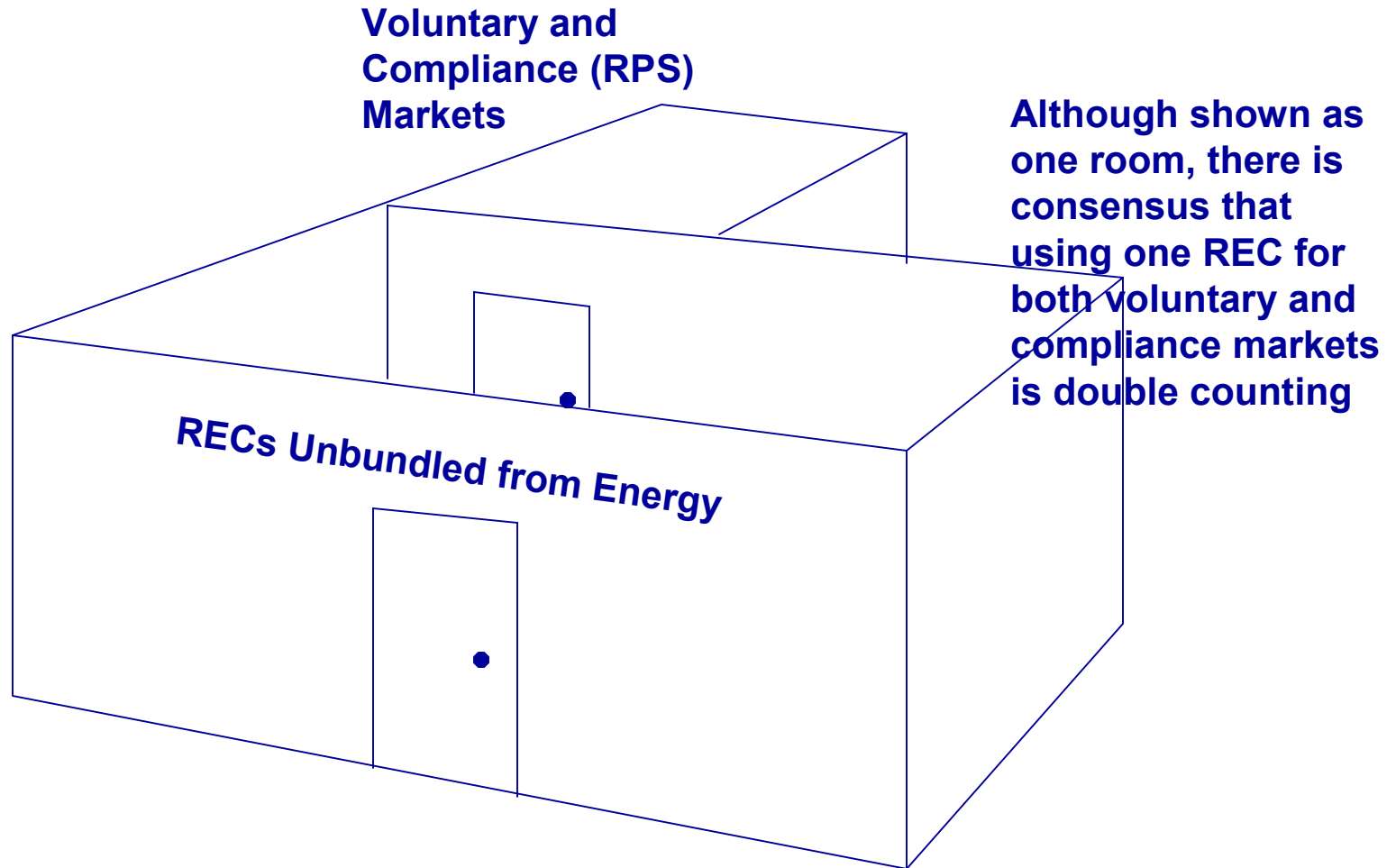


Original Design for Environmental Disclosure

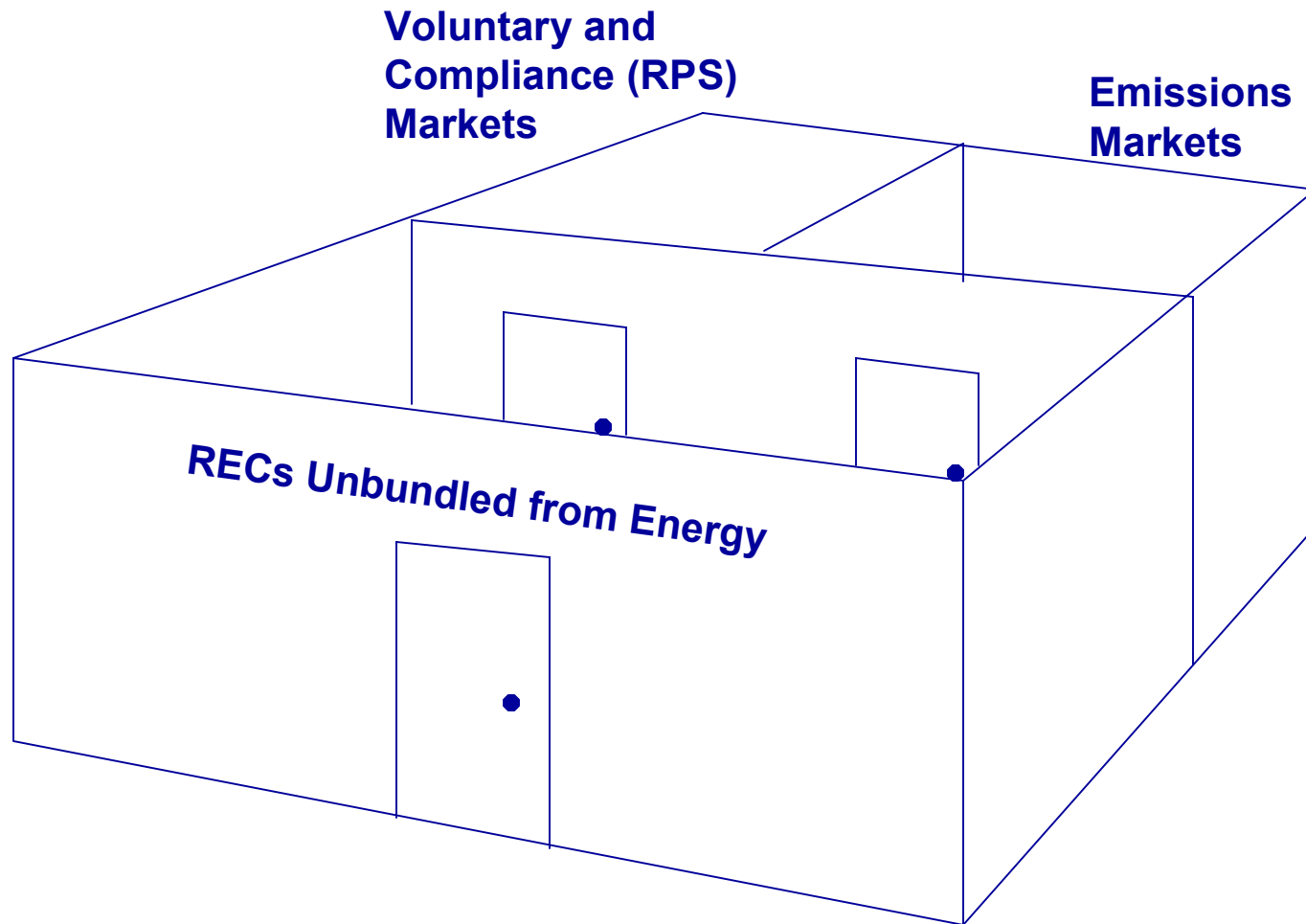
Architect: Enron, 1996

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RECs Market Addition

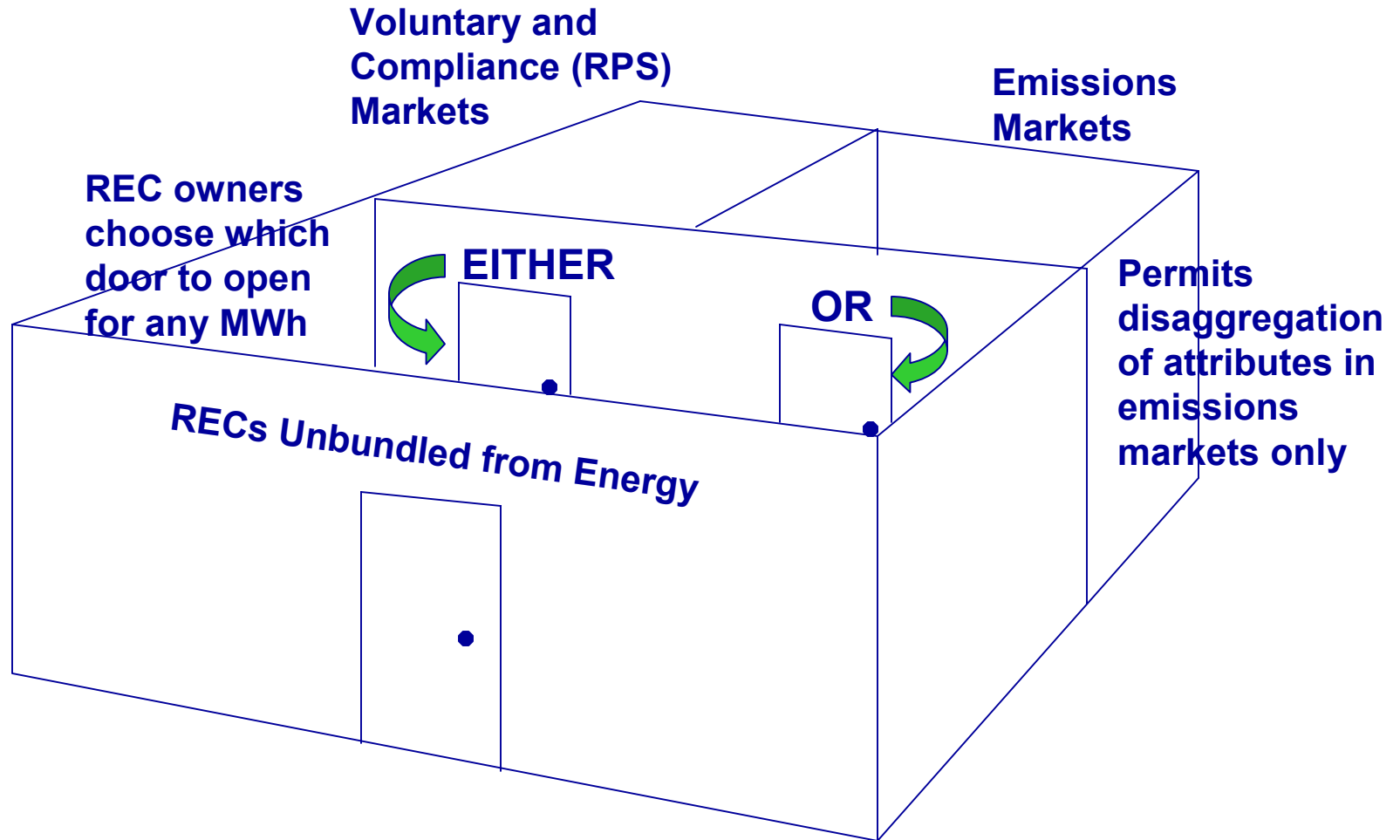


Emissions Markets Add-on



Either - Or Vision

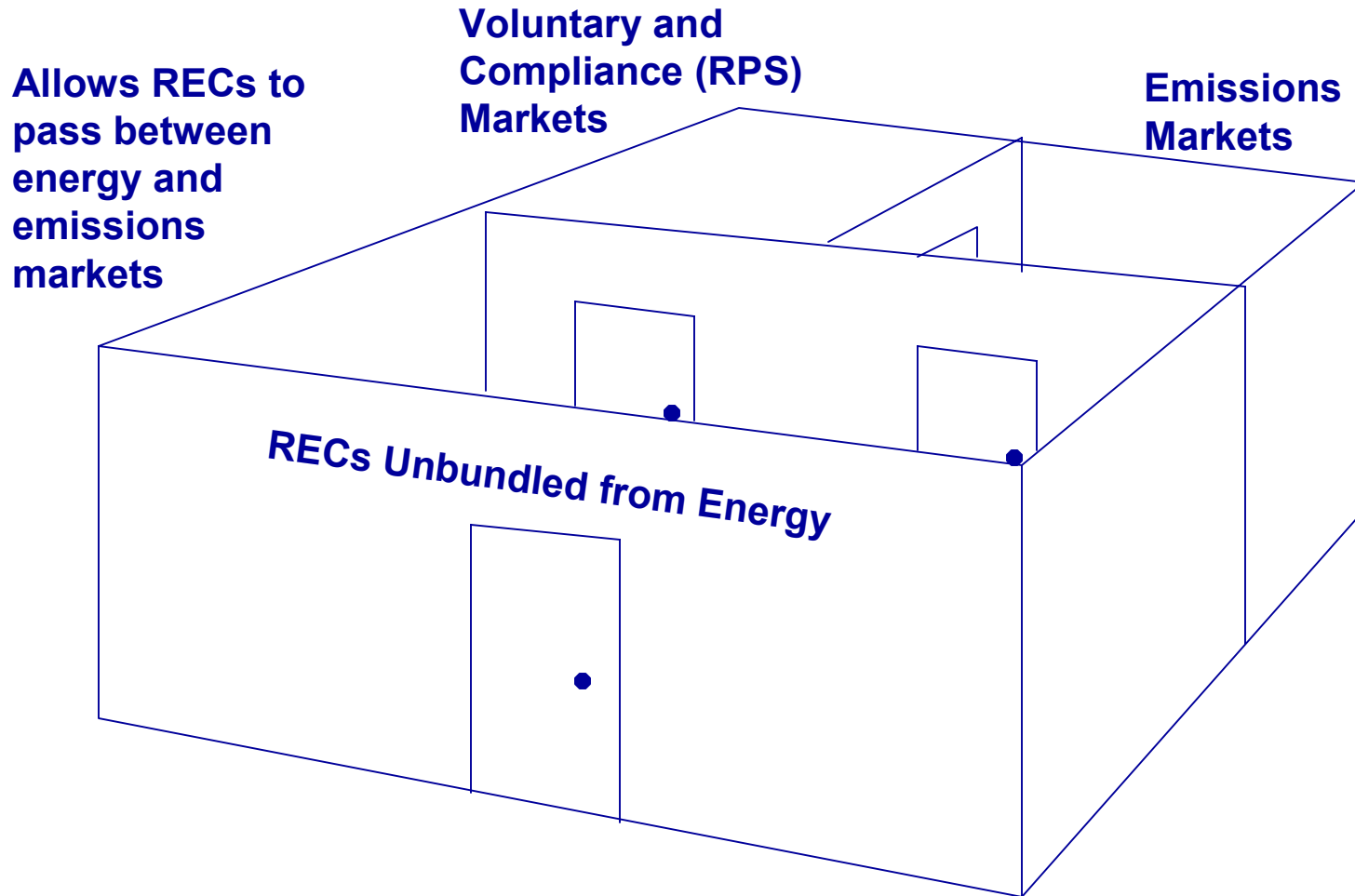
Prevents Double Counting



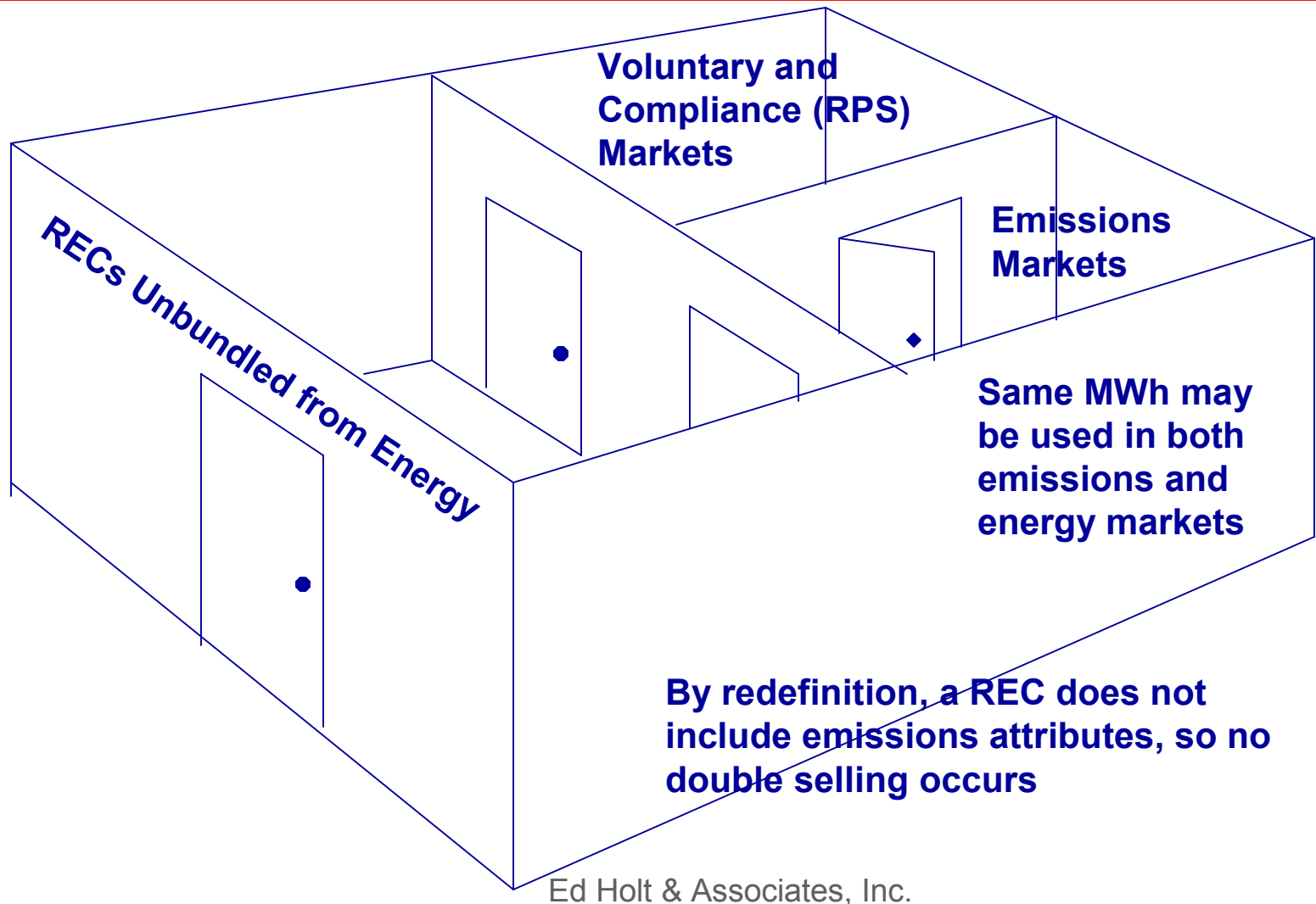
Either - Or Assessment

- How well does Either-Or vision satisfy goals?
 - Gives wind generators choices but does not support maximum revenue
 - May encourage more demand if both energy and environmental markets are strong (additive)
 - Protects credible retail markets
 - Supports additionality of energy and environmental policies
 - Does not increase fungibility of RECs

Multiple Markets Remodel



Multiple Markets Vision



Multiple Markets Assessment

- How well does this vision satisfy goals?
 - Does not create more demand for renewables
 - Enables max revenue if markets are good (is \$REC + NOx + CO2 + etc > \$REC w/all attributes?)
 - Risk of losing credibility in retail markets - requires serious consumer education about what they get with green power or a REC
 - Does not achieve additionality of policies
 - Creates a more fungible commodity
- Some say consumer disclosure is the answer for disaggregated RECs. Is it sufficient?

Buy Wind-ex*

Electricity generated from renewable
wind, with NOx** emission reductions***

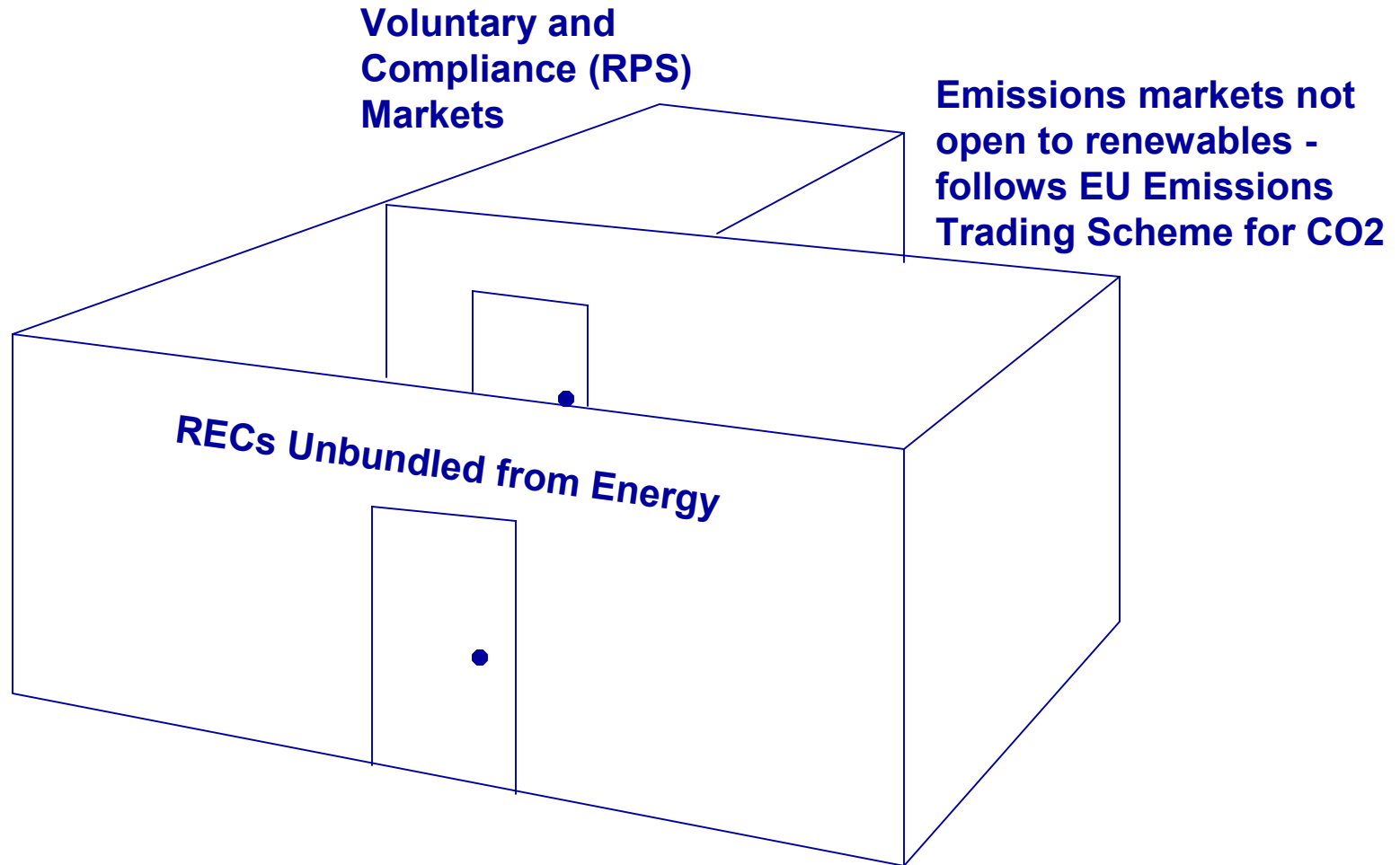
***Wind generators located in California. Environmental benefits may not apply in your area

*Does not include carbon, sulfur dioxide and mercury reduction benefits.

**NOx is nitrogen oxide, a pollutant released during the combustion of fossil fuel, and a contributor to smog and regional haze.

Separate Markets Vision

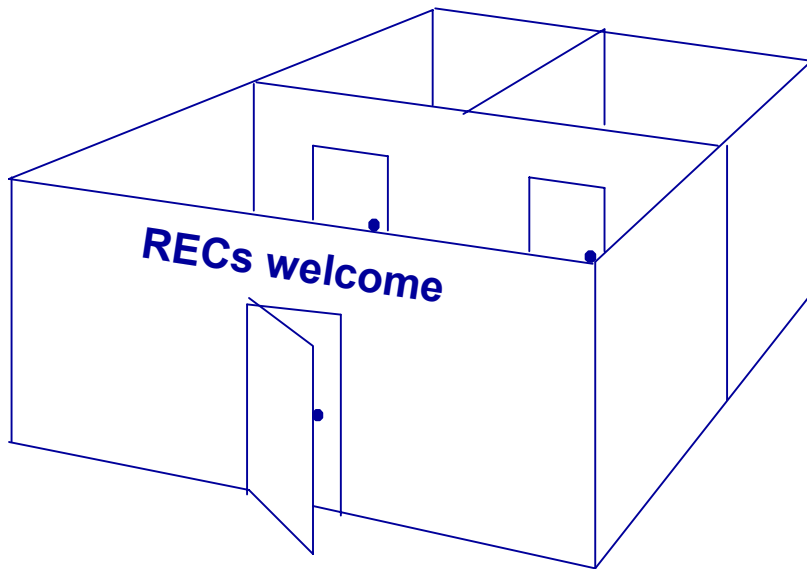
Two houses -- RECs and emissions are separate markets



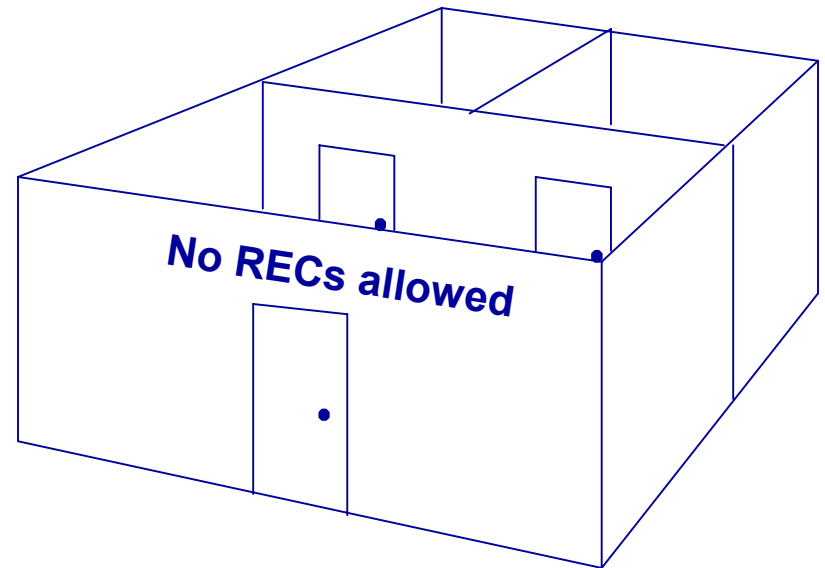
Separate Markets Vision

Two houses -- RECs and emissions are separate markets

**RECs markets:
Voluntary and Compliance**



**Emissions markets not
open to renewables, like EU
Emissions Trading Scheme
for CO2**



European Rationale

- Additionality principle drives thinking
- Renewables have own support mechanisms
- Compliance with CO₂ caps imposes cost on emitting sources, making renewables relatively more cost-effective
- Renewable (and efficiency) policies are taken into account in setting emission caps
 - therefore contribute to emission reductions
- There are cheaper ways to reduce emissions than renewable energy

Separate Markets Assessment

- How well does Separate Markets vision satisfy goals?
 - Creates demand for renewables by focusing on renewable energy support policies
 - Does not necessarily maximize revenue but may make renewables more cost-effective
 - Supports credible retail markets and protects credibility among consumers
 - Maintains additionality principle for energy and environmental policies
 - Creates two separate fungible commodities
 - Offers greater simplicity

Questions for Panel

- Should we pry open the door to emissions markets and cross the threshold?
- Of those objectives mentioned, what would your priorities be?
- What approach should we pursue?
- What are the implications of allowances granted for some emissions, and in some states, but not others?
- Will that lead to market convergence or fragmentation?
- How does that affect marketing claims (this is the Green Power Marketing Conference)?
- Should we/Should we not change the definition of a REC to its resource attribute only? Why?
- Is it realistic to change given the momentum already behind acceptance of a fully aggregated REC?
- If we don't reach consensus and if we go our separate ways with REC definitions, how will that affect REC markets?